October Mixed Waste Subgroup Highlights

The Hanford STCG Mixed Waste (MW) Subgroup met on October 14, 1999 in the EESB Stampede Room at 1:00 p.m.

Rick Wible was introduced as the new DOE-RL representative from Science and Technology on this subgroup. Ron Brodzinski, PNNL, gave a viewgraph presentation on work that PNNL is doing for SRS involving a TRU/Cs/Sr monitoring system. A pilot plant at SRS is to be constructed to remove Cs from process effluent. PNNL will build and install two separate monitors to nondestructively and quantitatively determine the concentrations of ^{90}Sr, ^{137}Cs and other gamma emitters as well as TRU as the waste flows through a pipe. This effort is based on previous work done to install a ^{137}Cs monitor at ORNL. The TRU monitor is to be installed by April 30, 2000 and the gamma monitor by August 31, 2000. The effluent being monitored is to be grouted. The TRU monitor uses scintillating glass optical fibers to detect both spontaneous fission and neutrons emitted by the TRU. This device wraps around the waste pipeline. The device used to measure the gamma emitters is a large high-resolution germanium gamma-ray spectrometer with an automatic adjustable tungsten iris collimator. A meeting is being held next week in SRS to plan the next tasks in the project.

Norm Olson distributed a list of the waste management technology needs status as of October 14, 1999. In support of meeting the need "Solidification of High Salt Wastes", RL-MW020, a MWFA funded demonstration was completed in September. The demonstration was of tectonite and the report is due at the end of October and will describe how tectonite compares with other materials and methods in treating the salt wastes. Members from the MWFA will be in town at the end of October to meet with PNNL and FDH personnel on remote size reduction needs at Hanford. A paper is being put together on this for the MWFA. This effort may be funded by $100K from an Idaho TTP this FY as part of the Remote Systems Initiative.

Bill Bonner stated that PNNL is putting together a proposal for research on a hydrogen getter. The proposal is to be sent to the MWFA by November 11, 1999. This is in response to the MW need entitled "Getter for Hydrogen", RL-MW026. The technology would remove hydrogen generated in TRUPACT containers. Norm Olson reported that FDH Technology Management has prepared and sent to DOE-RL four pre-proposals for their review. The four pre-proposals will be sent to all subgroup members for their review and comments. The titles of these pre-proposals are: (1) Provide Remote Technologies for Caisson Retrieval and Disposition; (2) Provide Remote Systems for Processing and Disposition of Long-Length Equipment and Oversized TRUW, (3) Application of Raman and XRF Analytical Techniques to Characterize Mixed Waste, and (4) Decontamination System for 324/327 Building. The first two pre-proposals deal with specific MW

needs that were sent to the MWFA. The third deals with the use of X-ray fluorescence (XRF) and Raman spectroscopy instead of TCLP extraction in the 222-S laboratory. This would result in waste and cost reductions onsite. The fourth pre-proposal deals with decontaminating the manipulators in the 324/327 Buildings in a more cost effective and safer manner.

Norm Olson will send all subgroup members copies of the technology needs assessments that FDH Technology Management completed in September. Nearly 40% of the PHMC needs were combined into three reports dealing with TRU characterization, surface decontamination, and remote handling. The idea of the reports is to identify similar needs across the PHMC projects and identify opportunities for using technologies to meet PHMC needs across the projects. The nine TRU characterization technology and science needs are further divided into three more categories (Properties of PU materials, Remote TRU Locator, and NDA-TRU Assay System) and then an assessment of the needs, the current approach and research activities, and conclusions/recommendations for each category are described. The surface decontamination assessment has 15 technology needs divided into four categories (Long Lived Fixatives; In Situ Decontamination of Facility Walls, Floors and Ceilings; In Situ Decontamination of Facility Support Structures; and Ex Situ Equipment/Debris Decontamination). The remote systems assessment has 27 technology needs divided into four categories (Remote Retrieval, Remote Size Reduction, Remote NDE/NDA/Monitoring, and Remote Treatment).

Work on the Boxed Waste Assay System (BWAS) is done until further funding can be obtained. So far the MWFA has contributed $200K to the effort and promised $125K more. It was recently estimated that to completely certify BWAS would cost $1.2 million over two years. Therefore $800K is still needed to complete the effort. A meeting will take plan next week with PHMC and DOE-RL on how to proceed. It may be decided to wait until later to certify BWAS.

Information from the MWFA was distributed and discussed. A draft copy of the MWFA goals and strategies was reviewed. All subgroup members with comments are to get them to Ellen Dagan ASAP. She will then put a reply together to send to the MWFA. A draft copy of the MWFA Multi-Year Program Plan for FY 2000 will be sent to all subgroup members for review. The MWFA work is divided among three product lines (Material Handling and Characterization, Nonthermal Treatment, and Thermal Treatment Enabling) and across seven major problem areas (Nondestructive Characterization, Payload Enhancement for TRU Transportation, Handling MW Contaminated Materials, Alternatives to Incineration, Facilitating Deployment for Unique Waste and Monitoring and Removing Contaminants from Off-Gas). Each of these seven problem areas is a separate work package and is discussed in detail in the document including a problem description, strategy to address the problem, and solutions to execute the strategy. Included in this discussion is information on how the DOE Complex's needs are being met, the schedule or timeline to

resolve the problem, and the funding to be spent on each problem over the next five fiscal years.

The next MW subgroup meeting will be November 10 at 1 p.m. in the EESB Stampede Room.

Mixed Waste Subgroup Meeting Attendees – 10/14/99

Bill Bonner	PNNL	372-6263
Larbi Bounini	WMH	376-4650
Ron Brodzinski	PNNL	376-3529
Joe Brothers	PNNL	375-2396
Ellen Dagan	DOE-RL	376-3811
Tina Masterson-Heggen	Ecology	736-5701
Norm Olson	FDH-TM	372-4810
Wayne Ross	PNNL	372-4684
Jim Sloughter	FDH-TM	375-2413
Steve Weakley	PNNL	372-4275
Rick Wible	DOE-RL	372-4776